WHAT IS CLAIMED IS:

1. A method of scalable multifunctional network communication between presentation devices and service providers, comprises:

using a group of service interface modules for interfacing with the presentation devices;

using a group of CPE units coupled to the service interface modules;

using a group of CPE units communicating with coupled to the presentation devices;

receiving via a headend control computer upstream messages from the CPE units and sending via a headend control computer downstream messages to the CPE units;

interfacing between the headend control computer and the service providers via a group of service provider control subsystems; and

wherein the headend control computer receives messages from the CPE units and transfers them to the service provider control subsystems, and the headend control computer receives messages from the service provider control subsystems and transports them to the CPE units.

2. A method according to claim 1, wherein the messages include service messages bearing data and control messages in the form of request messages.

3. A method according to claim 2, wherein the request message includes a plurality of message requests from the CPE units.

4. A method according to claim 3, further including receiving the message requests at the CPE units and selecting at least one of them as an Aloha time slot for sending at least one request message upstream to the headend control computer.

5. A method according to claim 4, further including receiving at the headend control computer request signals from the CPE units and arranging them in a request queue update message and sending it downstream to the CPE units.

6. A method according to claim 5, further including receiving at the CPE units the request queue update message and adding it to their local request queues, and sending service messages from the CPE units to the headend control computer in response to the assigned time slots of the request queue.

7. A method according to claim 6, further including receiving at the headend control computer the service messages from the CPE units and in turn distributing them to the CPE units and service provide control subsystems.

8. A method according to claim 1, further including interconnecting each CPE and presentation devices via service interface modules.

9. A method according to claim 1, further including interconnecting service providers and the headend control computer via service message administration control function units.

10. A method according to claim 1, further including sharing at least one channel using time division multiple access.

11. A method according to claim 1, further including modulating, transmitting, acquiring, tracking and demodulating signals on the uplink and downlink.

12. A method according to claim 1, further including tracking the phase of a master system clock via a local clock.

13. A method according to claim 12, wherein for clocks synchronization purposes, the uplink is locked to the downlink.

14. A method according to claim 8, further including acquiring and tracking interval boundaries on the downlink.

15. A method according to claim 1, wherein messages are carried in slots, and each has a message header.

16. A method according to claim 1, further including organizing and transmitting control messages via control applications.

17. A method according to claim 1, further including using message transmit queues and message receive queues in both the headend computer control and each CPE.

18. A method according to claim 1, further including using at least one request queue in each one of the CPEs and the headend computer control.

19. A method according to claim 1, further including monitoring the downlink for the purpose of selectively inputting messages intended for it by each CPE, and for the purpose of maintaining downlink synchronization.

20. A method according to claim 1, further including demodulating and decoding uplink messages via the headend computer control.

21. A method according to claim 1, further including using a receive router at the headend computer control for monitoring the received messages and routing them in accordance with their message headers.

22. A method according to claim 1, further including using transmission schedulers in each CPE and the headend computer control for affecting transmission of messages.

23. A method according to claim 22, further including regulating the length and frequency of transmitted messages so that they are within desired range-of-values by the transmission scheduler.

24. A method according to claim 6, further including collecting request messages and forming the request queue update message.

25. A method according to claim 24, further including receiving requests update messages and placing the messages contained therein in a request queue under the control of an insertion algorithm.

26. A method according to claim 1, wherein each CPE utilizing a request synchronization algorithm control application for determining that the CPE's local request is identical to the master request for synchronization purposes.

27. A method according to claim 1, further including synchronizing the local request with the master request by a request synchronization algorithm.

28. A method according to claim 1, wherein a request insertion algorithm of a CPE is request synchronized, and establishes and maintains a IR transmit times for a substantial number of IRs in the local request queue.

29. A method according to claim 1, further including registering each CPE, the registering including determining a CPE offset, the offset being the propogation time on the downlink between each CPE and the headend control computer.

30. A method according to claim 1, wherein each CPE contains a set of messages to be transmitted in a message transmit queue.

31. A method according to claim 1, further including selecting an IR message for transmission by means of a transmission scheduler, and determining the order of IR selection for transmission based on characteristics of the IR message.

32. A method according to claim 1, wherein each CPE includes a transmission scheduler for selecting Aloha slots for transmission of a request message.

33. A method according to claim 32, wherein the transmission scheduler determines that a request message caused to be transmitted has suffered contention, and thus is prevented from being successfully received by the headend computer control.

34. A method according to claim 1, further including generating interval requests for Aloha intervals by means of an Aloha slot supply algorithm in the headend control computer.

35. A system of scalable multifunctional network communication between presentation devices and service providers, comprises:

a group of service interface modules for communicating with coupled to the presentation devices;

a group of CPE units coupled to the service interface modules;

means for receiving via a headend control computer upstream messages from the CPE units and sending via a headend control computer downstream messages to the CPE units;

means for interfacing between the headend control computer and the service providers via a group of service provider control subsystems; and

wherein the headend control computer receives messages from the CPE units and transfers them to the service provider control subsystem, and the headend control computer receives messages from the service provider control subsystems and transports them to the CPE units.

36. A system according to claim 35, wherein the messages include service messages bearing data and control messages in the form of request messages.

37. A system according to claim 36, wherein the request message includes a plurality of message requests from the CPE units.

38. A system according to claim 37, further including means for receiving the message requests at the CPE units and selecting at least one of them as an Aloha time slot for sending at least one request message upstream to the headend control computer.

39. A system according to claim 38, further including means for receiving at the headend control computer request signals from the CPE units and arranging them in a request queue update message and sending it downstream to the CPE units.

40. A system according to claim 39, further including means for receiving at the CPE units the request queue update message and adding it to their local request queues, and means for sending service messages from the CPE units to the headend control computer in response to the assigned time slots of the request queue.

41. A system according to claim 40, further including means for receiving at the headend control computer the service messages from the CPE units and in turn distributing them to the CPE units and service provide control subsystems.

42. A system according to claim 35, further including interconnecting each CPE and presentation devices via service interface modules.

43. A system according to claim 35, further including interconnecting service providers and the headend control computer via service message administration control function units.

44. A system according to claim 35, further including means for sharing at least one channel using time division multiple access.

45. A system according to claim 35, further including means for modulating, transmitting, acquiring, tracking and demodulating signals on the uplink and downlink.

46. A system according to claim 35, further including a master clock in the headend control computer and a local clock in each CPE unit, wherein the local clock tracks the phase of the master system clock.

47. A system according to claim 46, further including means for locking the uplink to the downlink for clocks synchronization purposes.

48. A system according to claim 42, further including means for acquiring and tracking interval boundaries on the downlink.

49. A system according to claim 35, wherein messages are carried in slots, and each has a message header.

50. A system according to claim 35, further including control applications for organizing and transmitting control messages.

51. A system according to claim 35, further including means definingt message transmit queues and message receive queues in both the headend computer control and each CPE.

52. A system according to claim 35, further including means defining at least one request queue in each one of the CPEs and the headend computer control.

53. A system according to claim 35, further including means for monitoring the downlink for the purpose of selectively inputting messages intended for it by each CPE, and for the purpose of maintaining downlink synchronization.

54. A system according to claim 35, further including demodulating and decoding uplink messages via the headend computer control.

55. A system according to claim 35, further including a receive router at the headend computer control for monitoring the received messages and routing them in accordance with their message headers.

56. A system according to claim 35, further including transmission schedulers in each CPE and the headend computer control for affecting transmission of messages.

57. A system according to claim 56, further including means for regulating the length and frequency of transmitted messages so that they are within desired range-of-values by the transmission scheduler.

58. A system according to claim 40, further including means for collecting request messages and forming the request queue update message.

59. A system according to claim 58, further including means for receiving requests update messages and placing the messages contained therein in a request queue under the control of an insertion algorithm.

60. A system according to claim 35, further including in each CPE means for utilizing a request synchronization algorithm control application for determining that the CPE's local request is identical to the master request for synchronization purposes.

61. A system according to claim 35, further including means for synchronizing the local request with the master request by a request synchronization algorithm.

62. A system according to claim 35, further including means defining a request insertion algorithm of a CPE is request synchronized, and establishes and maintains a IR transmit times for a substantial number of IRs in the local request queue.

63. A system according to claim 35, further including means for registering each CPE, the registering including determining a CPE offset, the offset being the propogation time on the downlink between each CPE and the headend control computer.

64. A system according to claim 35, wherein each CPE contains a set of messages to be transmitted in a message transmit queue.

65. A system according to claim 35, further including means for selecting an IR message for transmission by means of a transmission scheduler, and

determining the order of IR selection for transmission based on characteristics of the IR message.

66. A system according to claim 35, wherein each CPE includes a transmission scheduler for selecting Aloha slots for transmission of a request message.

67. A system according to claim 66, wherein the transmission scheduler determines that a request message caused to be transmitted has suffered contention, and thus is prevented from being successfully received by the headend computer control.

68. A system according to claim 35, further including means for generating interval requests for ASBIs by means of an Aloha slot supply algorithm in the headend control computer.

69. A headend unit for scalable multifunctional network communication between CPE units coupled between presentation devices and service providers, comprises:

a headend control computer fore receiving upstream messages from the CPE units and for sending downstream messages to the CPE units;

a group of service provider control subsystems for interfacing between the headend control computer and the service providers;

wherein the headend control computer receives messages from the CPE units and transports them to the service provider control subsystems, and the headend control computer receives messages from the service provider control systems and transports them to the CPE units.

70. A headend unit according to claim 69, wherein the messages include service messages bearing data and control messages in the form of request messages.

71. A headend unit according to claim 69, further including a group of service interface modules.

72. A headend unit according to claim 71, further including means for receiving requests from the CPE units and arranging them in a request queue update message and sending it downstream to the CPE units.

73. A consumer premise equipment (CPE) unit for scalable multifunctional network communication between presentation devices and service providers via a headend control computer coupled to the service providers through service provider control subsystems, comprises:

means for coupling to the presentation devices;

means for sending messages to the headend control computer upstream messages and receiving from the headend control computer downstream messages;

wherein the headend control computer receives messages from the CPE and other like CPE units and transfers them to the service provider control subsystems, and the headend control computer receives messages from the service provider control subsystems and transports them to the CPE units.